

# Taking A Lead and Copper Sample Properly

Sometimes water samples fail because of sampling error. To ensure that this does not happen to you, follow these steps when taking the Lead and Copper samples from your water system.



## Step One



**SAMPLES** Must be taken at different locations of the systems. Use your 141A reporting form to select your sample sites. Or use your ADEC- approved sampling plan. If you only serve one site, sample that site.

## Step Two



**THE OPERATOR MUST MAKE PRIOR ARRANGEMENTS**, with the homeowners to take the sample, and explain the sampling procedures. Or arrange to be allowed into their homes to take the samples.

## Step Three



**GET THE BOTTLES FROM YOUR LAB** (1 liter plastic sample bottles) along with the certification forms that must be filled out by you and the individual that will be taking the sample (If it is not you).

## Step Four



**FIRST** flush the cold water line for 3 to 4 minutes using the faucet you will use for the sampling. (Note the time) **THEN** the water **MUST NOT** be used for at least 6 hours anywhere in the building. (**Not even flushing the toilet**) The water must stay motionless.

Make sure the water is not used anywhere in the house or building for 6 hours prior to taking the sample.

## Step Five



**GET THE "FIRST DRAW"** To do this **Do Not** run the water without the bottle under the faucet. Put the bottle under the faucet and turn on the cold water (**NEVER HOT**) to a gentle stream to fill the bottle.

## Step Six



**FILL THE BOTTLE** to the shoulder and turn off the water. **DO NOT** Overflow the bottle. Tightly cap the sample bottle and label with site, date, and time.

## Step Seven



**FILL OUT THE PAPER WORK** The person taking the sample must certify the last time the water was used prior to taking the sample and when the sample was taken. Keep a copy for your files. Mail the sample and original paper work to the lab.

## NOTE:



If the sample faucets have screens/aerators, they should be removed, cleaned and flushed 2 –3 times per year. **DO NOT** remove the screens/aerators during the sampling process!

Take the first draw. Make sure the bottle is under the faucet when you turn the water on.



Sample must be sent to the lab within 14 days of sampling

# Lead and Copper Rule

The Lead and Copper Rule (LCR) requires all Class A public water systems to collect tap water samples to determine lead and copper levels to which customers may be exposed. Lead and Copper enter our drinking water primarily as a result of the corrosion of materials containing copper and lead (copper pipes and lead solders) in our household plumbing and, to some extent, in the water distribution system. When over 10% of the homes sampled in a community have lead and copper levels above the Action Levels (AL) of 15 and 1300 parts per billion (ppb) respectively, the system is required to have a program in place to minimize lead and copper in drinking water. That program must include a corrosion control treatment plan and public education for the customers.

## Health effects of Lead:

Lead is a common metal found throughout the environment; the air, soil, and water. It is commonly used in paints, and certain types of pottery and porcelain. Lead can pose a significant risk to your health if too much of it enters your body. Lead builds up in the body over many years and can cause damage to the brain, red blood cells and kidneys. The greatest risk is to young children, pregnant women and their fetuses. To reduce your exposure to lead in drinking water, a common practice should be to let the water run from the tap until the water gets noticeably colder, usually about 30 seconds, before using it for drinking or cooking anytime the water in the faucet has gone unused for more than 6 hours.

## Health effects of Copper:

Copper is a naturally occurring common metal found throughout the environment in which we live. Copper is also an essential element in our diets, just like iodine, copper plays an important role in the metabolism of foods we eat, and is part of the chemical structure of many of the enzymes that make our body work. There is no evidence that copper causes diseases in humans, however, at elevated levels, copper is considered to be an irritant, and may cause stomach or intestinal distress. Among people who are pre-disposed to Wilson's Disease (a hereditary metabolic condition found in 1 out of every 30,000 individuals) copper at elevated levels will aggravate the disease.

## How can Lead and Copper in water be reduced?

Those systems which exceed the AL requirements for lead and copper trigger corrosion control requirements and may first have to conduct studies to compare the effectiveness of

- pH and alkalinity adjustment (reduces the acidity of the water);
- calcium adjustment (promotes the formation of protective coatings inside pipes); and the
- addition of phosphates or silica-based corrosion inhibitor (forms protective coating inside pipes).

After the corrosion control study is completed and a treatment is designated, systems will have 24 months to install optimal corrosion control treatment and 12 months to collect follow-up samples to determine treatment effectiveness. Within 6 months after follow-up sampling, water quality parameters are set, in which the water system must continue to operate. These water quality parameters include pH, alkalinity, calcium, orthophosphate and silica.

